

Serial No. 10/023,745

Reply to Office Action of March 9, 2005

**Amendments to the Drawings:**

The attached drawings includes changes to Fig. 5. The changes include the addition of a channel card 12 to the base station 11. This sheet, which includes Fig. 5, replaces the original sheet including Fig. 5.

Attachment: Annotated Sheet Showing Changes  
Replacement Sheet

**REMARKS**

Claims 1-42 are pending in this application. By this Amendment, Fig. 5, the specification and claims 1-3, 7-14, 17-18, 22-33 and 36 are amended and new claims 37-42 are added. Various amendments are made for clarity and are unrelated issues of patentability. For example, various claim amendments are to change "signal" to --signals--.

The Office Action objects to the drawings under 37 C.F.R. § 1.83(a). In particular, the Office Action states that the channel card recited in claim 9 must be shown in the drawings. The above amendment to Fig. 5 shows channel card 12 in the base station 11. The specification is also appropriately amended. Withdrawal of the objection is respectfully requested.

The Office Action rejects claims 1, 2, 6-8 and 10-36 under 35 U.S.C. § 102(b) over U.S. Patent 5,627,879 to Russell et al. (hereinafter "Russell") and rejects claim 9 under 35 U.S.C. § 103(a) over Russell. The Office Action also rejects claims 3-5 under 35 U.S.C. § 103(a) over Russell in view of U.S. Patent 6,067,173 to Gordon et al. (hereinafter "Gordon"). The rejections are respectfully traversed.

Independent claim 1 recites a base station configured to output first digital in phase and quadrature phase (I/Q) signals and an optical connecting unit configured to convert the first digital I/Q signals into optical signals and output the converted optical signals through an optical cable. Independent claim 1 also recites an optical base station configured to convert the optical signals into second digital I/Q signals, and convert the second digital I/Q signals into first RF signals for transmission.

Russell does not teach or suggest all the features of independent claim 1. In particular, Russell does not disclose the use of digital in phase and quadrature phase signals in addition to their use in a base station, optical connecting unit and optical base station. The Office Action states that Russell's signals are inherently a type of signal that is a digital in phase and quadrature phase signal. Applicants respectfully disagree.

Russell discloses in Fig. 28, the alleged multiplexing of DIGITAL POTS/DATA IN signals, DIGITAL VIDEO signals and DIGITAL PCN/MICROCELL TRAFFIC signals. The Office Action relies on Russell's QAM modulator 460 as corresponding to a multiplexer. However, as will be described below, Russell does not multiplex I/Q signals within a base station. Rather, the QAM modulator 460 shown in Fig. 28 merely selects one of the input signals (i.e., DIGITAL/POTS/DATA IN signals, DIGITAL VIDEO signals or DIGITAL PCN/MICROCELL TRAFFIC) signals for transmission to the optical transmitter 462. Accordingly, Russell does not teach or suggest the claimed base station configured to output first digital in phase and quadrature phase I/Q signals and an optical connecting unit configured to convert the first digital I/Q signals into optical signals as recited in independent claim 1.

Furthermore, the Office Action appears to rely on Russell's Fig. 29 to show features relating to the optical base station. However, these features do not relate to converting an optical signal into second digital I/Q signals and converting second digital I/Q signals into first RF signals for transmission as recited in independent claim 1. Accordingly, independent claim 1 defines patentable subject matter.

Each of independent claims 11, 18, 22, 26 and 31 define patentable subject matter for at least similar reasons. That is, each of the independent claims at least relates to signals including in phase and quadrature phase (I/Q) signals and/or I/Q signals. Russell does not teach or suggest these features and does not inherently include these signals. Accordingly, each of the independent claims defines patentable subject matter.

Claims 2-10 and 37 depend from claim 1, claims 12-17 and 38 depend from claim 11, claims 19-21 depend from claim 18, claims 23-25 and 39 depend from claim 22, claims 27-30 and 40 depend from claim 26, claims 32 and 41 depend from claim 31 and claims 34-36 and 42 depend from claim 33 and therefore define patentable subject matter at least for this reason.

In addition, the dependent claims also recite features that further and independently distinguish over the applied references. For example, dependent claim 7 recites a multiplexer/demultiplexer configured to multiplex the first digital I/Q signals as well as an optical transceiver and a clock unit configured to provide a synchronous signal to the multiplexer/demultiplexer unit. As discussed above, Russell's QAM modulator 460 does not multiplex digital I/Q signals but rather selects one of DIGITAL POTS/DATA IN signals, DIGITAL VIDEO signals or DIGITAL PCN/MICROCELL TRAFFIC signals. This does not correspond to multiplexing I/Q signals. Additionally, the Office Action states that Russell does not explicitly show a clock unit configured to provide a synchronous signal to the multiplexer/demultiplexer unit. The Office Action then appears to reference Russell's, col. 31, lines 3-9. However, this section merely relates to clocking signals for a remote local oscillator

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and does not relate to a clock signal used in conjunction with a multiplexer/demultiplexer unit and/or the providing of a synchronous signal to a multiplexer/demultiplexer unit as recited in dependent claim 7. For example, the alleged clock signal is not provided to the QAM modulator 460 shown in Fig. 28. Thus, dependent claim 7 defines patentable subject matter for at least this additional reason.

Furthermore, dependent claim 4 recites that the optical base station further comprises a clock unit configured to provide a synchronous signal to the multiplexer/demultiplexer unit. Additionally, dependent claim 5 recites that the optical base station further comprises a reference clock unit configured to provide the synchronous signal of the clock unit to the up converter and the plurality of down converter units. The Office Action again appears to reference Russell's col. 31, lines 10-18. However, these features do not relate to synchronous signals provided to the multiplexer/demultiplexer and/or the up converter unit and plurality of down converter units for at least similar reasons as set forth above. These claims define patentable subject matter at least for those additional reasons.

Still further, dependent claim 37 recites that the multiplexer/demultiplexer converts the first digital I/Q signals from parallel to serial. See also dependent claims 38-42. However, as is shown in Russell's Fig. 28, the signals input to the QAM modulator 460 correspond to DIGITAL PODS/DATA IN signals, DIGITAL VIDEO signals and DIGITAL PCN/MICROCELL TRAFFIC signals. Therefore, Russell has no suggestion for converting digital I/Q signals from parallel to serial as recited in dependent claim 37. Dependent claim 37

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(and similarly dependent claims 38-42) define patentable subject matter at least for this additional reason.

For at least the reasons set forth above, each of claims 1-42 defines patentable subject matter. Withdrawal of the outstanding rejections are respectfully requested.

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### **CONCLUSION**

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance of claims 1-42. Favorable consideration and prompt allowance are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **David C. Oren**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
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FIG. 5

